COORDINATING SYSTEM for RESOURCE MANAGEMENT

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INTRODUCTION

The role of the field manager is of extreme importance. A dynamic, rewarding, and economically sound resource utilization and development program can be accomplished only through his effective performance.

His success is primarily dependent upon application of his technical and managerial abilities combined with the use of suitable planning tools.

This writing presents comprehensive planning record improvements and describes planning tool requirements which are designed to better serve the field manager in meeting his heavy program responsibilities. These improvements have many other beneficial possibilities for all levels of the Bureau resource management operation.

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Horace R. McBroom

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7th Annual CAS
Field Management Training Course
Portland, Oregon
April 5, 1963

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I. THE NEEDS AND REQUIREMENTS FOR A COMPREHENSIVE MANAGEMENT PLANNING SYSTEM

This Bureau manages surface resources on about 13 million acres of range lands, 3 million acres of forest lands, in excess of 28 million acres of mining and mineral leasing rights, and has extensive mineral rights on patented lands in the State of Oregon. These lands are, for the most part, scheduled for retention in Federal ownership for comprehensive conservation and development.

Many millions will be invested in future years for resource utilization, conservation and development. The spending must be well planned and result in actual money investment returns and increased resource values. The most economically sound methods will be needed to determine when and where to make money investments and to evaluate investment benefits.

The direct management of these lands is the responsibility of the various district offices. District office land management programs are defined by the Bureau and are clearly explained in the Bureau's program advice and in the publication, "Program for Public Lands and Resources," published by the Bureau in May 1962.

The Bureau's program is an existing plan for dynamic, economically sound management of lands and resources, projected on a long-range basis to obtain maximum utilization of resources.

Resource investments are made through the district office operations where field technicians and managers carry out the program. It is at this level that the technicians and managers determine when, where and how to make investments by using their technical and managerial abilities. These determinations are based on the guidelines given by Bureau program advice. These guidelines require that factual resource conditions and evaluations be considered on a comprehensive overall program basis.

The mechanics of planning, programming, and carrying out the management program involves accumulating a tremendous quantity of facts about the lands and resources to be managed. These facts will be used to coordinate, plan and carry out an overall land management program on an individual land parcel basis.

The Master Unit Classification System requires the collection of mass data which will give the field manager detailed facts to direct and carry out day-to-day operational plans and to formulate long-range program goals. The Master Unit System calls for the collection of detailed information and for presentation of a written land management plan. These data, when collected, are to be transferred by category to printed forms or graphically portrayed maps. A narrative analysis will project a program plan on the basis of an evaluation of the information to be collected. A study of the mechanics and problems of making planning determinations from these records reveals that factual resource conditions and evaluations cannot now be readily made.

A range manager, for example, must determine when and where to make economically sound conservation investments and range improvements. This determination, to a great extent, will be based upon his technical and managerial abilities. However, the manager must have sufficient facts before he can make this determination. He may need facts covering a large planning area or for any part of the area ranging down to a small land parcel. He must also have information concerning the general and detailed plans of other program activities.

A land examiner, as another example, must take into consideration the resource facts involving the forestry, range, engineering, and mineral programs on a small land parcel basis. The existing planning records do not permit presentation of detailed facts for evaluation by the manager on a variable area planning basis.

The following requirements for planning records are identified, and a brief discussion is made as to the adequacy of the existing procedures based upon this study group's observation and evaluation.

1. A uniform installation and control of the collection of facts and records in all district operations. The quality and quantity standards for information collection are not now uniform. The existing deficiencies indicates a need for quality and quantity control. Also, no method is provided for the deletion of program information which is no longer required.

2. A standard historical activity record control method. The technicians working on the individual work programs are not now able to utilize and coordinate the work, on the basis of the land history, plans and accomplishments of other programs on a land identification basis.

3. A uniform method to insure flow of information from field work accomplishments and plans onto the data planning records. There are innumerable flow sheets used by field technicians to insure recording of information onto planning records. Uniform flow sheets are desirable for all information to be collected and recorded on the planning records.

4. A uniform map and overlay system showing land and resource features and plans in sufficient detail to permit coordinating, formulating, and carrying out management programs on a geographical basis. The existing system has physical limitations, which do not permit meeting present planning requirements. The system presently being used has been developed to varying degrees in the districts. These layouts generally involve single programs and do not permit identification of conflicts. There presently is no uniform comprehensive map layout of program data on a geographic basis for planning purposes.

5. Economically sound, detailed data program information collection for the Master Unit Classification System.

a. A data collection method to accumulate expanding mass, changing, detailed information, including:

(1) Inventory of lands and resources
(2) Identifying land and resource conditions
(3) Identifying land and resource potential and value
(4) Inventory of land and resource use--past and present
(5) Record of land and resource improvements
(6) A priority schedule and plan of work to be accomplished

b. Detailed data presentation in suitable form with tabulations to enable evaluation of program factors in conjunction with map layout to prepare the program plan.

c. Rapid change or adjustment in collection, tabulation and presentation of detailed data.

d. Detailed information collection, tabulation, computations and presentation to integrate, complement and meet the needs of the Master Unit Classification System, cost accounting, program planning and reporting, land and resource inventory, and existing record system.

The existing district operation stores detailed data in individual program activity records or in the Master Unit Atlas. This method does not permit the storage of overall program data on a land parcel indentification basis. The present information collection method has physical limitations which cause it to fail in meeting the rapid compilation and computation requirements of an action program, such as the rapid computation of fire protection contract responsibilities and charges; the recalculation of the allowable annual timber cut; rapid computation of the program progress; and rapid inventory statistics. Many evaluations are not possible under the existing system, and there is no flexibility for expansion and change of program information requirements.

There is considerable need for improvement in the existing planning records. It is estimated that each individual district operation in Oregon will collect an estimated 7 million detailed facts concerning resource conditions and plans within the next ten years. The existing planning records are accomplished entirely by human or manual procedures and have inherent limitations which do not permit meeting the requirements of dynamic planning. There are strong indications that the continuation of the existing records would result in actual financial losses, even though the Bureau anticipates financial gain through utilizing mass data for implementation of a well-planned intensive management program. On the succeeding pages, several changes and improvements in planning records are presented which will meet district program needs.

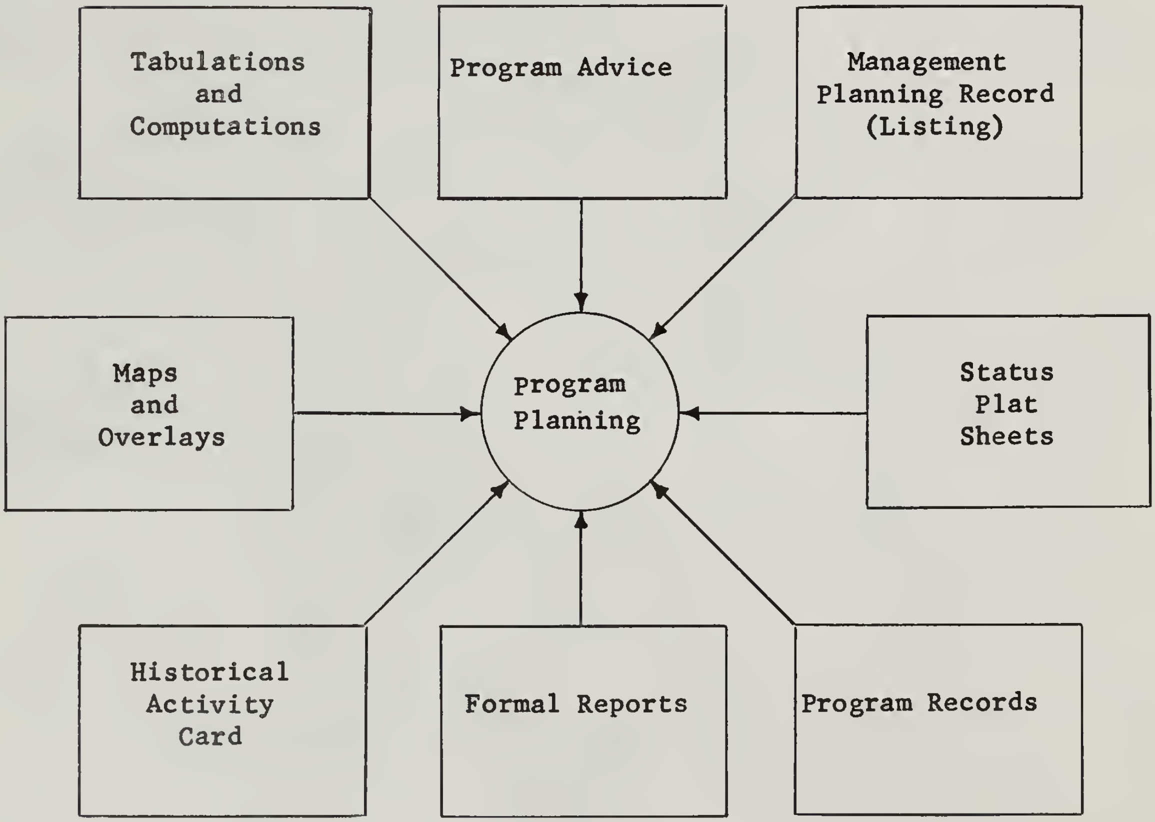
II. COORDINATED SYSTEM FOR RESOURCE MANAGEMENT

The primary purpose of the system pictured below is to provide the field manager with effective planning tools to respond to his program responsibilities, which include the master unit classification system, cost accounting, land and resource inventory, and other program requirements.

The system incorporates a number of existing procedures used for program planning and has several planning record improvements. An important record improvement is a data processing system for accumulating and presenting the detailed data needed for planning purposes. Other record improvements are also featured to respond to the field manager's requirements. These include a standardized map and overlay record and a historical activity record.

ELEMENTS OF PROGRAM PLANNING

(District Level)



III. THE MANAGEMENT PLANNING RECORD IMPROVEMENTS

Four major improvements in planning records are presented for installation and use in district offices.

A. The Mapping and Overlay Planning Record

This mapping and overlay planning record will show land and resource features and program plans in sufficient detail to permit coordinating, formulating and carrying out an overall detailed program on a geographic basis. The management planning record with detailed facts and tabulations will be used directly with the overlay to make determinations.

The map and overlay consists of a base map with an overlay for engineering activities and/or a range or forestry overlay on an "as required" basis. The maps and overlays would be arranged in township order by master unit and installed on wall map racks. The overlays are designed to be readily removed for planning and drafting purposes in any sequence.

The base map contains selected data of a somewhat permanent nature, such as land ownership pattern, needed land tenure adjustments, withdrawal information, mining claims and a general layout of prominent land features, such as major highways, rivers and drainages. The base is a planimetric map, 1" - 1,000', based upon photogrammetic control of the type presently in use in western Oregon districts.

Contour maps, 1" - 1,000', when available would be interchanged with the base map for engineering and logging activities. A standard base map, 1" - 1,000', with standard overlays would be utilized for those townships where no photogrammetric maps are available.

The base map and overlay at the 1" = 1,000' scale will permit greater accuracy in recording, scaling and transferring data from 1:12000 photographs which are used in field operations.

The engineering overlay shows existing roads, rights-of-way, planned road construction, survey and section corner information, minor streams and drainages, aerial photo centers, potential recreation sites, present and proposed installations, dams, buildings and mining activities.

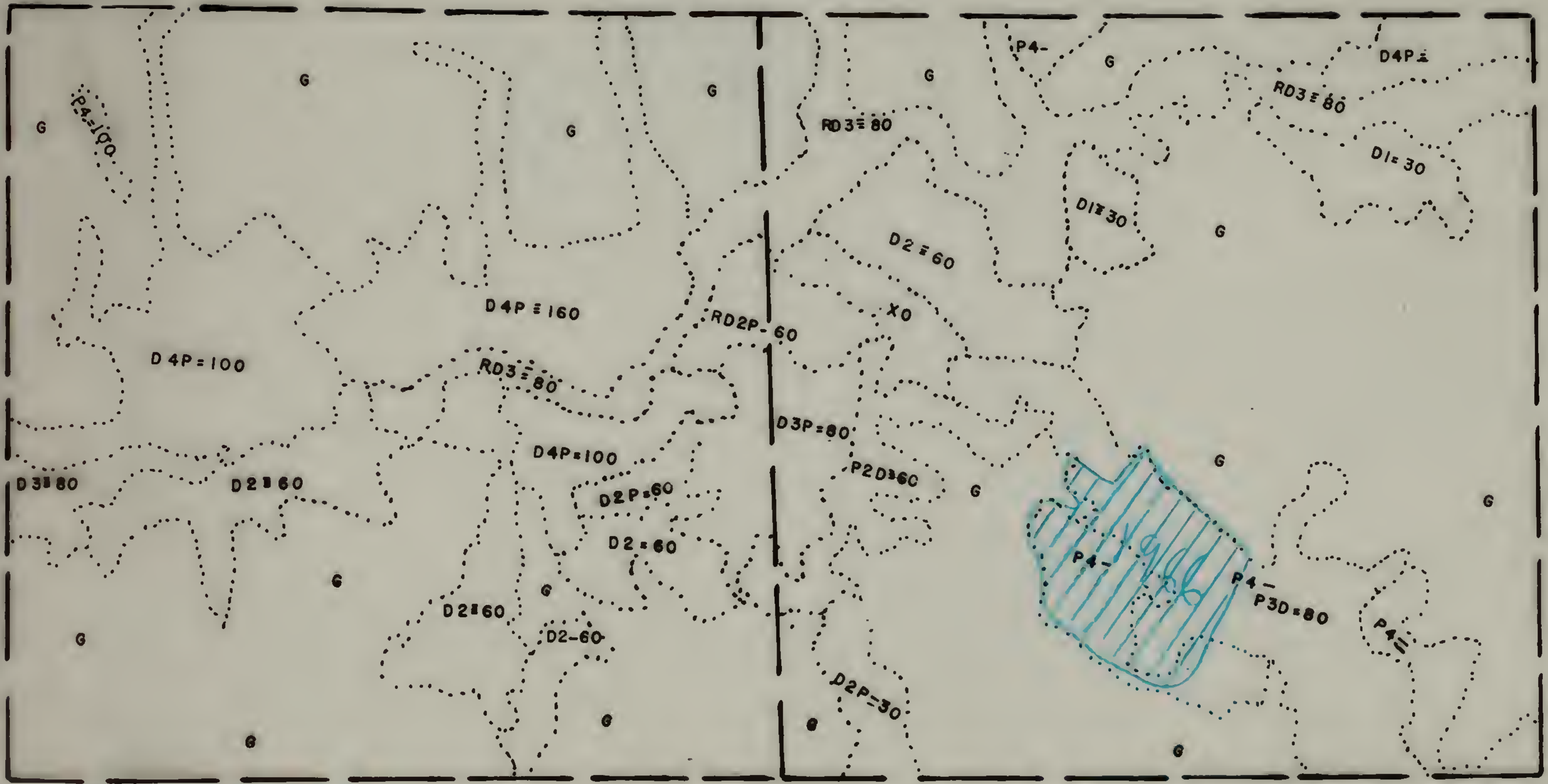
The range overlay shows information as to allotment, licensee's name, allotment number, range grass types, existing and planned improvements, such as check dams, fencing and seeding areas, AUM's, and range conditions.

The forestry overlay shows the timber type, present timber sales, planned timber sales, seeding and planting areas, fire areas, trespass areas, natural damage areas, planned salvage operations, non-commercial thinning and other forest improvements.

A sample map and overlay planning record for two sections is presented here showing selected data and plans on a base map with overlays. The actual base map and overlay is made on a township basis. The sample overlay is 0.004. The overlay in actual operation will be 0.003, permitting clear visual evaluation.

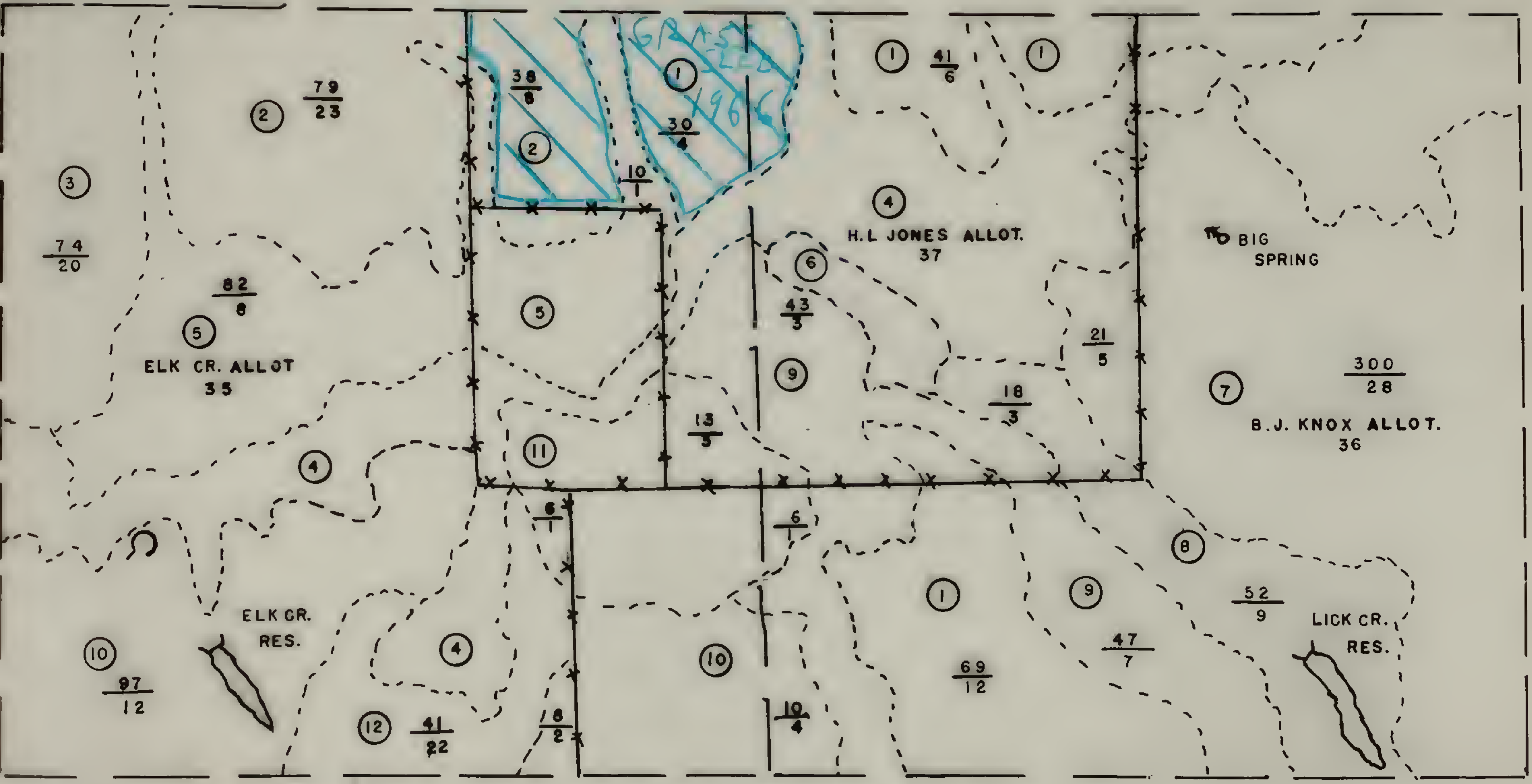
The minimum standard requirements for planning details to be used on the maps and overlays would be specified in published instructions for uniform installation and maintenance.

FOREST OVERLAY

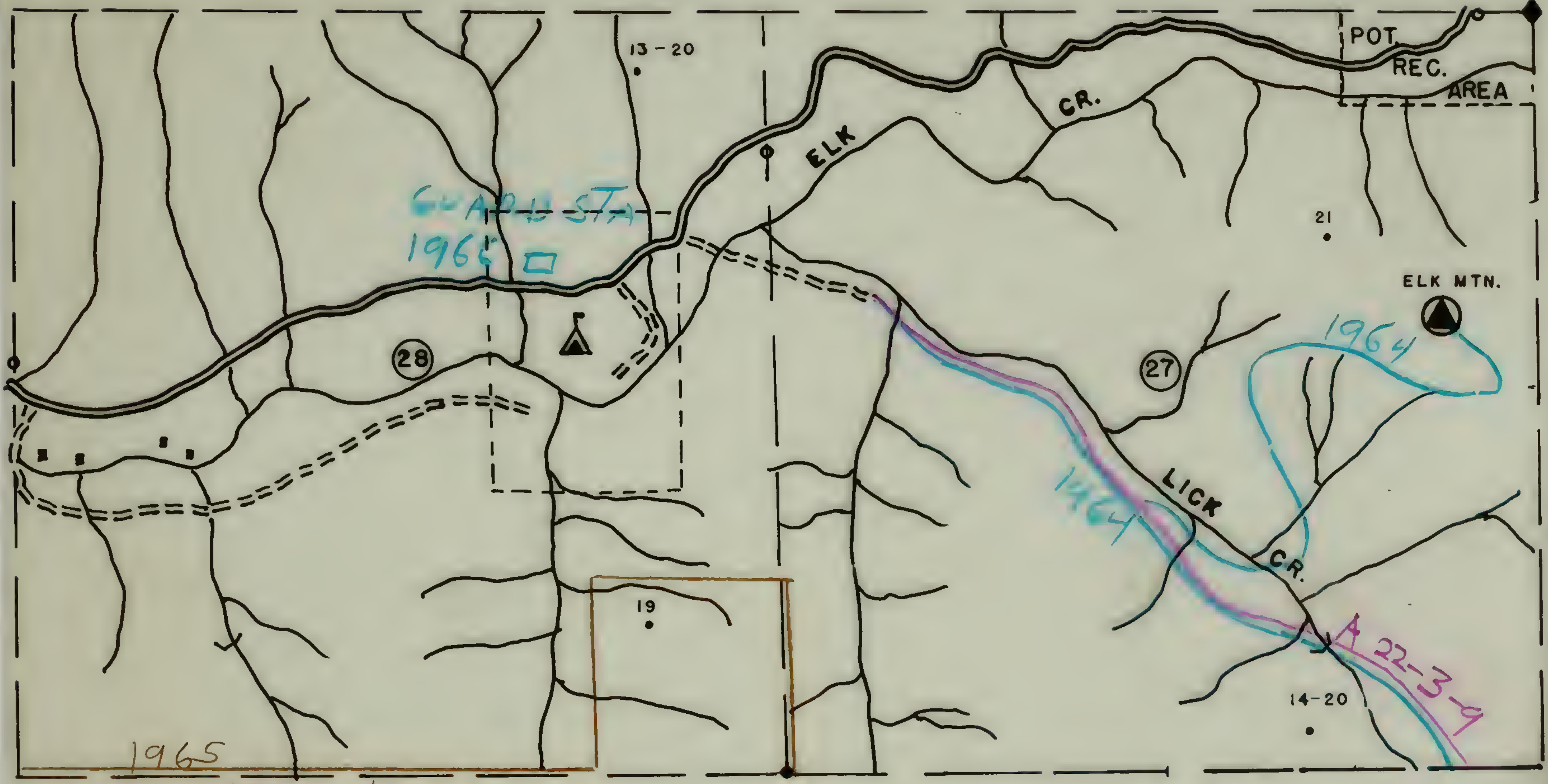


— PLANNED SALE

RANGE OVERLAY

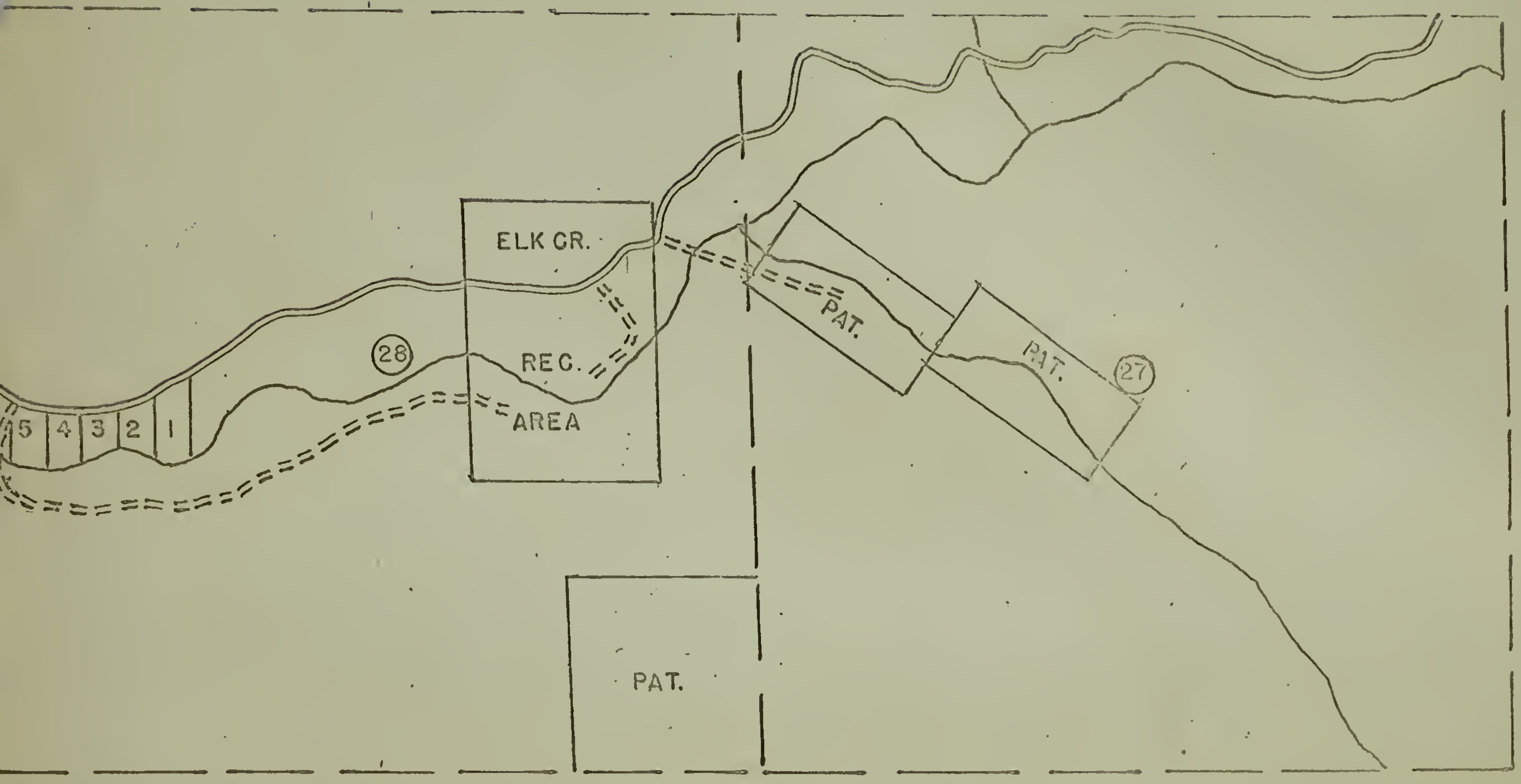


ENGINEERING OVERLAY



— R/W obtained
— CONSTR planned
— CAd. SURVY. PLANNED

BASE MAP



B. The Historical Activity Record

The historical activity record will provide a means for field technicians to utilize and coordinate the work history and accomplishments of all programs on a land identification basis.

The record form has columnar spaces for inserting date and file control information for selected program work. The form is maintained on a section basis and must be posted currently in order to serve its purpose. The form is centrally filed in the district office for use by all personnel.

The sample form shown here is used in conjunction with the other component records of the planning record system.

HISTORICAL ACTIVITY CARD

Sec.________Twp.________Rge.________M.________

________________District

Master Unit________Program Work Area________

Lands Report		Withdrawals		Mineral Report		R/W		Road Constr.		Other Constr.		Timber Sales		Material Sales		Treatment		Grazing Allotment	
Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Date	Type and Number	Number	Names of Licensees

C. The Printed Management Planning Record Produced by Data Processing

This management planning record contains and organizes all recorded facts about land and resources inventories, resource conditions and plans. The record can be printed for any component part of a planning jurisdiction from the entire state area to a master unit, or down to an individual 40-acre subdivision as required for operational use.

The record replaces the detailed data recorded in the Master Unit Atlas, and it becomes an integral and moving part of the atlas. The record will contain the same required facts that are now recorded in individual activity records and the Master Unit Atlases. The improvement derived by installing the management planning record is better organization of the factual information to permit coordinated planning.

The major product of the data processing records will be the printed management planning records for use by field technicians and managers. The development of management planning records is done in two phases. The first phase is the complete collection of initial basic land identification information. This information is not now assembled but is readily available from basic land records. This information is required to formulate the individual plans for any program activity. The initial development also involves converting the cumulative detailed facts recorded in individual activity records and the Master Unit Atlases, to the data processing records. The second phase is the gradual development and accumulation of facts and changes resulting in current program activities.

The initial management planning record furnished to the field technician will give basic land facts and program record information for the lands within his work jurisdiction. A new or revised management planning record would be furnished on a scheduled annual or more frequent basis, if necessary. Each new management planning record received would show total cumulative facts and changes.

The records are kept current by the field manager until receipt of the new listing containing the changes of record information. The field office managers and field technicians utilize the management planning record in conjunction with other planning tools for formulating determinations as required in day-to-day planning operations and in continuous long-range program planning. The formulated plans are posted on the data program record.

A complete description of data input from field operations to the processing unit and output from the processing unit to the field operations is given on succeeding pages in detail. The forms, cards and instructions have been designed to show initial selections of facts to be recorded on the data processing records.

data
The most important features of/processing are the byproducts which are made available for management planning. Most important of these are organized facts for presentation in a form which permits intensive management on a variable planning area and individual land parcel basis.

The record gives multiple use and increased value to recorded facts by making the facts available for complex studies which are required for management decisions.

The data processing records integrate, segregate or tabulate all or any part of program activities, as necessary.

The data processing records automatically cancel out facts no longer usable.

The record gives recorded facts concerning all programs and possible conflicts which enables the field manager to coordinate all program activities.

The data processing records will furnish uniform and quality data for planning purposes.

The initial selection of facts to be recorded makes possible the accumulation of approximately 200 factual items, and the data processing method can be developed to furnish additional factual items, computations, and tabulations on a virtually unlimited basis.

A sample management planning record as it would be printed by data processing is presented to illustrate the form in which it will appear.

BUREAU OF LAND MANAGEMENT

FIELD MANAGEMENT PLANNING RECORD

LAND AND RESOURCES INVENTORY, RESOURCE CONDITIONS, AND PROGRAM PLANS

OREGON
KLAMATH COUNTY
LAKEVIEW DISTRICT
LOST RIVER MASTER UNIT
BONANZA GRAZING DISTRICT

RECORDED DATA AS OF JUNE 30, 1965
SUPERSEDES RECORD DATED JUNE 30, 1964

154695 ALLOT 35 T 40 S R 14E SEC 1 LOT 1 39.45 2500 ELEV 18 RNFL SDY CLAY RGE TPE NDS ACCESS NO WDL
ACCESS ACQUIS NEC PL 167 COMP RD SURV SCH FY 66 PLANS INC NO FIRE PROT PRI FUEL CHT GR. RGE SURV COMP FY 63
ADJ INC SOIL TYPE 7 DEP 5 IN

CUR PLNS:

154696 ALLOT 35 T 40 S R 14 E SEC 1 LOT 2 39.46 2500 ELEV 18 RNFL SDY CLAY RGE TPE NDS ACCESS NO WDL
PL 167 COMP RD SURV SCH FY 66 PLNS INC NO FIRE PRO PRI FUEL CHT GR RGE SURV COMP FY 63 ADJ INC SOIL TPE 7
DEP 5 IN

CUR PLNS:

154697 ALLOT 35 T 40 S R 14 E SEC 1 SWNE 40.00 2500 ELEV 18 RNFL SDY CLAY RGE COMM FOR NDS ACCESS PWR SITE
WDL POT REC STE TPE 2 PLND INSTL FY 67 VAL MIN CLM PL 167 COMP RD SURV SCH FY 66 PLN INC NO FIRE PRO
PRI FUEL CHT GR SEC JUN-PNE RGE SURV COMP FY 63 ADJ INC SOIL TPE 7 DEP 5 IN 120 M MAT TBR TBR SALE SCH
FY 67 10 ACRES 60 M

CUR PLNS:

154698 ALLOT 35 T 40 S R 14 E SEC 1 SESE 40.00 2500 ELEV 18 RNFL SDY CLAY RGE TPE NDS ACCESS NO WDL PL 167 COMP
NO FIRE PRO PRI FUEL CHT GR RGE SURV COMP FY 63 ADJ INC NO RGE IMP NEC SOIL TPE 7 DEP 5 IN

CUR PLNS:

D. The Rapid Statistics and Computations Produced by Data Processing

"Data Processing" produces rapid statistics and computations for inventory and planning. These data can be produced on a variable area and program field in virtually any combination. The computations that can be obtained are controlled by the quantity of information stored. This inherent quality of the system will permit its expansion to meet virtually any and all demands in the forseeable future. The system is ideally suited for meeting program problems such as the three following examples.

Problem No. 1:

$100,000 is made available for additional range improvement in a grazing district. Where could it best be used?

The District Manager's Action:

1. On his past knowledge of general conditions, he might decide to spend the entire sum on one grazing unit, a master unit or spread over the entire district. He decides, in this instance, to work on one grazing unit which he knows to be generally in the poorest condition.

    a. He relays to the Management Data Section the following request for a listing of the land parcels with the following desired characteristics.

        (1) Poor range condition
        (2) Downward range trend
        (3) Heavy erosion
        (4) Continuing erosions
        (5) Planned stock water improvements
        (6) Management plans completed
        (7) No withdrawals
        (8) Adjudication completed
        (9) Lack of mining activity

    b. He receives from the Management Data Section a listing of the land parcels that have all of the desired characteristics.
    c. He checks this listing against the historical activity card file and finds the file numbers for pertinent reports, such as management or watershed plans.
    d. Using the map and overlays he lays out the necessary range improvements such as seeding, brush control, water improvements which he wishes to complete, employing the management plan as a guide in planning and cost analysis.

Problem No. 2:

Layout timber sales to cut ten million board feet of timber in a grazing unit.

The District Manager's Action:

1. Requests from Management Data Section a listing of land parcels with following information.
    a. Mature timber
    b. No cattle watering holes
    c. No potential or planned recreation areas
    d. No conflicting withdrawals
    e. No conflicting planned withdrawals or exchanges
    f. PL 167 completed and no outstanding verified statements or conflicting mining rights
    g. Adequate access
2. Receives a listing of all land parcels containing mature timber which are clear of any conflict.
3. Using the forest overlay, engineering overlay and base map or contour map, if available, along with the timber inventory, he lays out the necessary number of timber sale areas.

The above problems are typical. The tabulation and computation of data are a tedious and time consuming operation under current procedures. Data processing will furnish these data within a fraction of the time now required.

Problem No. 3:

Computation of annual fire protection costs.

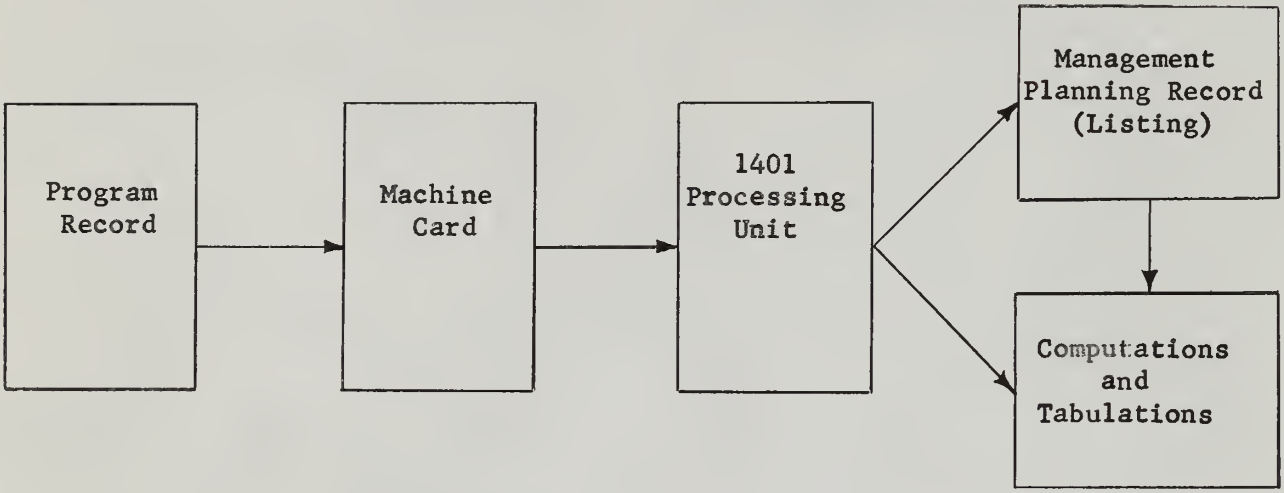
The Chief, Branch of Protection's Action:

1. Requests from Management Data Section a tabulation of the acres protected and computation of annual payment for each protection agency.
2. Receives information directly and makes payments accordingly.

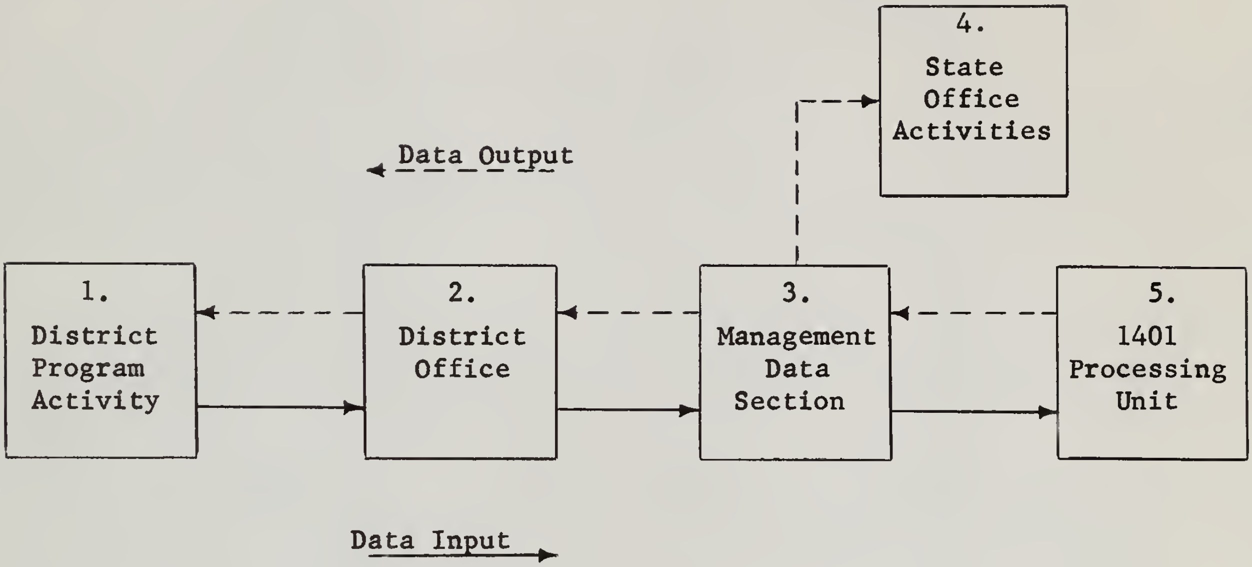
IV. THE DETAILS OF PRODUCING THE PRINTED MANAGEMENT PLANNING RECORDS BY DATA PROCESSING

A. Details

The machine processing of program data involves the recording of data on program record forms by field technicians and managers. This data from the program record forms is then transferred to machine punch cards. The cards are fed to the data processing unit which produces the printed management planning record, tabulations and computation for use in the district field operations or for special studies. The system is a card system for use with the 1401 Data Processing Unit, which is available locally in the Bonneville Power Administration Data Processing Unit. the 1401 Data Processing System is pictured in an IBM publication presented under general information about data processing in this report. An outline showing transition of data in this system is pictured below.


Program Record
Machine Card
1401 Processing Unit
Management Planning Record (Listing)
Computations and Tabulations

A functional outline of the flow of the input and output data is outlined below.



The data flows as input to or output from the data processing unit.

Input

Function No. 1 is each individual district program activity. The data originates at this point and is forwarded on program record forms through the district office, which is identified as Function No. 2. The district office retains one copy of the form, the other being forwarded to the management data section, which is identified as Function No. 3. The Management Data Section would operate as a state staff activity separate from the major program activities, i.e., range, forestry, lands and minerals management, and engineering. The Management Data Section would be independent of these activities to impartially serve, coordinate and program data needs for the district and state office activities. The data recorded on the program record forms is transferred to the machine cards in the Management Data Section. The cards are periodically forwarded to the data processing unit, which is Function No. 5, for filing and program use.

Output

The printed management planning record, tabulation and computations are screened by the Management Data Section and forwarded to the district offices, Function No. 2, for use. Tabulations and computations on special studies are sent to both the State Office staff activities, Function No. 4, and district offices, Function No. 2, for planning and reporting uses. This can include studies on a state-wide basis for use by the office of the Director. The printed management planning records are distributed by the district office to each program activity involved in any particular program operation affected by the record. Machine tabulations and computations required for program operations would also be made available to field program operations for planning purposes.

The factors in determining machine card data organizational requirements are as follows:

1. A machine card for 1401 Data Processing System has 80 columns for punching data.

2. The data will periodically change to reflect resource and program accomplishments.

3. The data will be used to print management planning records.

4. The data will be of such quantity that a number of machine punched cards will be required.

5. The data will be assembled in a suitable form to permit the carrying out of programs on an individual land parcel basis.

6. All data will be assembled in a consolidated form for use in formulating overall plans for any size management unit.

7. An optimum 40-acre subdivision unit would be required to meet future overall program requirements. However, the system is flexible enough that for an interim period, range data can be recorded on a larger land parcel basis, if necessary.

The 40-acre subdivision requirement specified in this report was made after an evaluation of land and resource features was taken into consideration. Resource features vary considerably within each section, and the programs to be conducted on the lands are even more variable. Comprehensive plans outlined for the management of resources necessitates storing and distinguishing the data on a relatively small subdivisional basis.

The selection and organization of data for the program record forms, input code instructions and the machine data cards presented in this report have been designed accordingly. This report contains the initial data selection for showing the feasibility of installation of the system. Further coordinated study would be made before installation, and thereafter the operating program would involve routine data program changes.

The initial phase of development of the data processing system has been substantially completed in this report. The second phase would occur after authorization of funds for installation of the system. In this phase, selection of data for system installation would be made by a study team composed of a management data specialist, district and State Office personnel. The third phase of development occurs after the system installation, and involves routine changes made to adjust the data to changing program conditions. Again, these changes would be coordinated by the management data specialist with district and state personnel.

The necessary forms have been designed to collect data from field operations and plans. The initial data selected to show the feasibility of installing this system includes a great deal of information that will be required in present management planning. The forms for acquiring data from field operations have been named "Program Record Forms." Input code instructions for use in field operations have been named "Input Code Instructions." Sample machine cards to be used with the 1401 unit have been made for the various program activities. The sample program record forms, input code sheets and the machine data cards are shown separately by program activity on the succeeding pages.

A. MANAGEMENT MASTER CARD AND PROGRAM RECORD

(Initial Data Selection)

This card and its program record contain selected land and resource data which is required for planning and carrying out individual and overall program activities. These data are not subject to frequent change. Master cards will be processed in the 1401 processing unit either individually or in conjunction with any necessary number of program activity detail cards. A master card will be utilized for each 40-acre subdivision or remaining fractional subdivision. Each detail card for any program activity will be given the same serial number as its master card.

MANAGEMENT MASTER CARD
PROGRAM RECORD

COL.	
1-6	Serial Number
	LOCATION
7-8	State-Code
9-10	County-Code
11-12	District-Code
13-14	Master Unit-Code
15-16	Program Work Area-Code
17-18	Allotment No
	LEGAL DESCRIPTION
19	Meridian-Code
20-23	Township
24-27	Range
28-29	Section
30-33	Subdivision
34-37	Acres-BLM
	GEOGRAPHIC
38	Elev-1000 Ft-Code
39-40	Rainfall-Inches
41-42	Soil Type-Code

COL.	
	LANDS DATA
43	Land Desig-Code
44-45	Res. Potential-Code
46	Access
47-48	Withdrawal-Code
49-52	Mineral Rights-Acres

MANAGEMENT MASTER CARD
INPUT CODE

COLUMN	
1-6	Serial Number - enter direct.
7-8	State - Code by numbers from BLM Manual.
9-10	County - Code by number for each county.
11-12	District - Code by numbers from BLM manual.
13-14	Master Unit - Code by number.
15-16	Program Work Area - Code by number.
17-18	Allotment Number - Enter allotment number direct.
19	Meridian - Code by Number.
20-23	Township - Enter direct with letters and numerals.
24-27	Range - Enter direct with letters and numerals. ½ ranges and townships - Enter "X" in "Over-Punch" column.
28-29	Enter Section Number direct.
30-33	Enter 40's by legal description in letters. Enter lots as "LT", followed by number.
34-37	Enter Acres and Hundreths direct - only BLM ownership
38	Enter first numeral of average elevation (in thousands).
39-40	Enter inches of rainfall direct.
41-42	Enter soil type code as determined.
43	Enter code number for Forest Management, Range, Mineral Action, Recreation, and any combinations of uses.
44-45	Enter code same as above.
46	Enter "X" if legal access is adequate.
47-48	Enter code number to be determined for each type of withdrawal.
49-52	Enter acres and hundreths direct for all acreage in which the Government retains mineral rights.

CARD SERIAL NUMBER	LOCATION						LEGAL DESCRIPTION						GEO.			LANDS DATA					BLM MASTER MANAGEMENT CARD
	STATE	COUNTY	DISTRICT OFFICE	MASTER UNIT	PROGRAM WORK AREA	ALLOTMENT NO.	MERIDIAN	TOWNSHIP	RANGE	SECTION	SUBDIVISION	BLM ACRES	ELEVATION	RAINFALL	SOIL TYPE	LAND DESIGN.	RESOURCE POTENTIAL	ACCESS	WITHDRAWALS	MINERAL RIGHTS (ACRES)	
0 0 0 0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0 0 0 0	0 0 0 0	0 0	0 0 0 0	0 0 0 0	0	0 0	0 0	0	0 0	0	0 0	0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1 2 3 4 5 6	7 8	9 10	11 12	13 14	15 16	17 18	19	20 21 22 23	24 25 26 27	28 29	30 31 32 33	34 35 36 37	38	39 40	41 42	43	44 45	46	47 48	49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
1 1 1 1 1 1	1 1	1 1	1 1	1 1	1 1	1 1	1	1 1 1 1	1 1 1 1	1 1	1 1 1 1	1 1 1 1	1	1 1	1 1	1	1 1	1	1 1	1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2 2 2 2 2 2	2 2	2 2	2 2	2 2	2 2	2 2	2	2 2 2 2	2 2 2 2	2 2	2 2 2 2	2 2 2 2	2	2 2	2 2	2	2 2	2	2 2	2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
3 3 3 3 3 3	3 3	3 3	3 3	3 3	3 3	3 3	3	3 3 3 3	3 3 3 3	3 3	3 3 3 3	3 3 3 3	3	3 3	3 3	3	3 3	3	3 3	3 3 3 3	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
4 4 4 4 4 4	4 4	4 4	4 4	4 4	4 4	4 4	4	4 4 4 4	4 4 4 4	4 4	4 4 4 4	4 4 4 4	4	4 4	4 4	4	4 4	4	4 4	4 4 4 4	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
5 5 5 5 5 5	5 5	5 5	5 5	5 5	5 5	5 5	5	5 5 5 5	5 5 5 5	5 5	5 5 5 5	5 5 5 5	5	5 5	5 5	5	5 5	5	5 5	5 5 5 5	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
6 6 6 6 6 6	6 6	6 6	6 6	6 6	6 6	6 6	6	6 6 6 6	6 6 6 6	6 6	6 6 6 6	6 6 6 6	6	6 6	6 6	6	6 6	6	6 6	6 6 6 6	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
7 7 7 7 7 7	7 7	7 7	7 7	7 7	7 7	7 7	7	7 7 7 7	7 7 7 7	7 7	7 7 7 7	7 7 7 7	7	7 7	7 7	7	7 7	7	7 7	7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
8 8 8 8 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8	8 8 8 8	8 8 8 8	8 8	8 8 8 8	8 8 8 8	8	8 8	8 8	8	8 8	8	8 8	8 8 8 8	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
9 9 9 9 9 9	9 9	9 9	9 9	9 9	9 9	9 9	9	9 9 9 9	9 9 9 9	9 9	9 9 9 9	9 9 9 9	9	9 9	9 9	9	9 9	9	9 9	9 9 9 9	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
1 2 3 4 5 6	7 8	9 10	11 12	13 14	15 16	17 18	19	20 21 22 23	24 25 26 27	28 29	30 31 32 33	34 35 36 37	38	39 40	41 42	43	44 45	46	47 48	49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

B. GENERAL DETAIL CARD AND PROGRAM RECORD

(Initial Data Selection)

This card and its program record contain selected data for conducting lands, appraisal, realty, recreation, minerals, cadastral, construction, maintenance and protection programs. The frequency of data changes on this card will be regulated by the intensity of development of resource and program information. This detail card will be given the same serial number as its master card.

Sec.__________

Twp.__________

Rge.__________

Subd.__________

GENERAL
(CARD 10)
PROGRAM RECORD

COL.	
1-6	Serial Number.
7-8	Card Type....
	LANDS
9	Withdrawal Rev.............
10	Public Sale...............
11	Small Tract...............
12	Exchange..................
13	Desert Land Entry.........
14	S.L.U.P..................
15	Unauth. Occ..............
	APPRAISAL
16	Completed................
17	Original.................
18	Review...................
	REALTY
19	Easement Granted.........
20	Access Needed............
	RECREATION
21	Potential Site...........
22	Planned Site.............
23	Dev. Site Surv...........
	Work Needed
24	Repair-Rehab.............

Over-Punch

COL.	
25	Restore..................
26	Replace..................
	MINERALS
27	Val.-Allow. Clms.....
28	Min.Lse. or Perm.........
29	Pat. Appln...............
30	Min. Trespass............
31	Material Sales...........
	Mineral Resource Inventory
32	Init. Phase..............
33	Contin. Phase............
	P.L. 167
34	Prelim. Exam.............
35	Advertised...............
36	Verif. Stmts.............
	CADASTRAL
37	Survey Needed............
38	Mapping..................
	Type Survey
39	Resurvey.................
40	Special Survey...........
41	Original.................
42	Small Tracts.............

Over-Punch

GENERAL
(CARD 10)
PROGRAM RECORD

COL.	
	CONSTRUCTION
	Roads
43	Need Survey............
44	Plans Completed........
45	Bridges................
	Roads Needed
46	Access.................
47	Secondary..............
48	Fire...................
	Buildings
49	Fire Lookout........
50	Fire Guard Stat.....
	MAINTENANCE
	Roads
51	Condition Sur............
	Road Needs
52	Rebuild................
53	Resurf.-Grade..........
54	Drainage...............
	Buildings
55	Condition Sur............

COL.	
	Building Needs
56	Restore................
57	Repair-Rehab...........
58	Replace................
	PROTECTION
	Withdrawals
59-60	Protected Acres..........
61-62	Unprot. Acres............
	Contracted
63	Agency...................
64-65	Acres....................
66-67	Contract Rate............
	Fuels
68	Primary Type.............
69-70	Acres....................
71	Tons/Acre................
72	Secondary Type...........
73-74	Acres....................
75	Tons/Acre................
76	Exist. Improv............
77	Pot. Improv..............

Over-Punch

Over-Punch

GENERAL
(CARD 10)
INPUT CODE

COLUMN	
1-6	Serial Number - enter direct.
7-8	Card Type - enter / 1 / 0 /
	LANDS
9	Withdrawal Review - mark "X" if completed.
10	Public Sale - application pending or classified potential for sale, by code.
11	Small Tract - current for disposal or classified potential for disposal, by code.
12	Exchange - currently being processed or classified potential for exchange, by code.
13	Desert Land Entry - application pending or classified potential for entry, by code.
14	S.L.U.P. - Mark "X" in over-punch box, if permit issued. If issued indicate type, by code.
15	Unauthorized Occupancy - mark "X" in over-punch box, if condition present. If present, indicate type occupancy oruse, by code.
	Appraisal
16	Appraisal Completed - mark "X" in over-punch box if completed. If completed, indicate fiscal year completed, by code.
17	Original Appraisal - mark "X" in over-punch box ifappraisal needed. If needed, indicate fiscal year programmed for, by code.
18	Appraisal Review - if appraisal completed, indicate fiscal year review programmed for, by code.
19	Easement Granted - if granted to other agency or party, enter type of easement, by code.
20	Access Needed - indicate type management, by code.

RECREATION

21 Potential Site - indicate site type use, by code.

22 Planned Site - mark "X" in over-punch box, if plans completed. If plans completed, indicate fiscal year programmed for development, by code.

23 Developed Site Survey - indicate fiscal year survey is programmed for, by code.

Work Needed on Developed Site

24 Repair or Rehabilitation - mark "X" in over-punch box if needed. If needed, indicate fiscal year programmed for, by code.

25 Restore - mark "X" in over-punch box if needed. If needed, indicate fiscal year programmed for, by code.

26 Replace - mark "X" in over-punch box if needed. If needed, indicate fiscal year programmed for, by code.

MINERALS

27 Valid Claims or Claims Allowed under P.L. 359 - If valid claims present, mark "X" in number one over-punch box. If claims allowed under P.L. 359, mark "X" in number two over-punch box. If either or both type claims present enter total number present direct.

28 Mineral Lease or Permit - existing or potential, by code.

29 Patent Applications - indicate fiscal year programmed for, by code.

30 Mineral Trespass - indicate fiscal year programmed for, by code.

31 Material Sales - existing or potential, by code.

Mineral Resource Inventory

32 Initial Phase - mark "X" in over-punch box if completed. If not completed, indicate fiscal year programmed for, by code.

33 Continuing Phase - mark "X" in over-punch box, if completed. If not completed, indicate fiscal year programmed for, by code.

Public Law 167

34 Preliminary Examination - mark "X" in over-punch box, if completed. If not completed, indicate fiscal year programmed for, by code.

35 Advertised - mark "X" if completed.

36 Verified Statements - enter direct, the number received, which have not been processed.

CADASTRAL

37 Survey Needed - indicate type management needing the survey, by code.

38 Mapping - indicate type of maps completed, by code.

Type Survey Needed

39 Resurvey - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

40 Special Survey - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

41 Original - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

42 Small Tracts - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

CONSTRUCTION

Roads

43 Need Survey - indicate fiscal year programmed for, by code.

44 Plans Completed - mark "X" in overpunch box, if plans are completed. If plans completed, indicate fiscal year programmed for, by code.

45 Bridges - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

Roads Needed (Type)

46 Access - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

47 Secondary - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

48 Fire - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

Buildings

49 Fire Lookout - mark "X" in number one over-punch box, if needed. Mark "X" in number two over-punch box, if plans completed. If plans completed, indicate fiscal year programmed for, by code.

50 Fire Guard Station - mark "X" in number one over-punch box, if needed. Mark "X" in number two over-punch box, if plans completed. If plans completed, indicate fiscal year programmed for, by code.

MAINTENANCE

Roads

51 Condition Survey - indicate fiscal year programmed for, by code.

Road Maintenance Needed (Type)

52 Rebuild - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

53 Resurface or rehabilitate - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

54 Drainage - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

Buildings

55 Condition Survey - indicate fiscal year programmed for, by code.

Building Maintenance Needed (Type)

56 Restore - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

57 Repair or rehabilitate - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

58 Replace - mark "X" in over-punch box, if needed. If needed, indicate fiscal year programmed for, by code.

PROTECTION

Withdrawals

59-60 Protected Acres - enter number acres direct.

61-62 Unprotected Acres - enter number acres direct.

Contracted

63 Agency - indicate agency, with which protection is contracted, by code.

64-65 Acres - enter direct.

66-67 Contract Rate - enter direct.

Fuels

68 Primary Type - indicate fuel type, by code.

69-70 Acres - enter direct.

71 Tons/Acre - enter direct.

72 Secondary Type - indicate fuel type, by code.

73-74 Acres - enter direct.

75 Tons/Acre - enter direct.

76 Existing Improvements - indicate type, such as waterholes, guard stations, etc, by code.

77 Potential Improvements - indicate type, such as water hole development, fire breaks, etc., by code.

CARD								LANDS										RLTY.		RECREATION						MINERALS										CADASTRAL						CONSTRUCTION								MAINTENANCE								PROTECTION																					
															Apprsl.								Work Needed								M.R. Inv.		P.L. 167					Type Sur.				Roads						Bldgs		Roads				Bldgs.				Withdrwls.				Contract.					Fuels												
																																													Need			Fire			Need				Need																								
Serial Number						Type		Withdrawal Rev.	Public Sale	Small Tract	Exchange	Desert Land Entry	S.L.U.P.	Unauth. Occ.	Completed	Original	Review	Easemt. Granted	Access Needed	Potential Site	Planned Site	Developed Site Sur.	Repair-Rehab.	Restore	Replace	Val.-Allow.Cls.	Min. Lse.-Perm.	Patent Appln.	Min. Trespass	Material Sales	Init. Phase	Contin. Phase	Prelim. Phase	Advertised	Verif. Stmts.	Survey Needed	Mapping	Resurvey	Spec. Survey	Original	Small Tracts	Need Survey	Plans Compl.	Bridges	Access	Secondary	Fire	Lookout	Grd. Stat.	Condition Sur.	Rebuild	Resurf-Grd.	Drainage	Condition Sur	Restore	Rep.-Rehab.	Replace	Protected Areas		Unprotected Areas		Agency	Acres		Contract Rate		Prim. Type	Acres		Tons/Acre	Second. Type	Acres		Tons/Acre	Exist. Improv.	Pot. Improv.			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GENERAL CARD

C. RANGE DETAIL CARD AND PROGRAM RECORD

(Initial Data Selection)

This card and its program record contain selected data for conducting the range program. Related data is organized according to the program fields designated: management, condition, improvements, vegetation, animal use, soil and moisture. The frequency of data changes on this card will be regulated by the intensity and development of the range resource program information. This detail card will be given the same serial number as its master card.

Sec. ____________

Twp. ____________

Rge. ____________

Subd. ____________

RANGE
(CARD 20)
PROGRAM RECORD

COL.		
1-6	Serial Number	☐☐☐☐☐☐
7-8	Card Type....	☐☐ ....
	MANAGEMENT	
	Range	
9	Survey Compl....	☐ ....
10	Adjudicated.....	☐ ....
11	Plans Completed.	☐ ....
	Watershed	
12	Plans Completed.	☐ ....
13	Proj. Started...	☐ ....
14	Proj. Completed.	☐ ....
	Improvements	
15	Check Dams......	☐ ....
16	Pitting.........	☐ ....
17	Contouring......	☐ ....
	CONDITION	
18	Range...........	☐ ....
19	Range Trend.....	☐ ....
20	Pres. Cap. AUM's	☐ ....
21	Pot. Cap. AUM's.	☐ ....
	IMPROVEMENTS	
22	Brush Control...	☐ ....

COL.		
23	Weed Control.......	☐ ....
24	Fencing............	☐ ....
25	Seeding............	☐ ....
26	Erosion Control....	☐ ....
27	Pest Control.......	☐ ....
28	Blight Control.....	☐ ....
	VEGETATION	
29-31	Grasses............	☐☐☐ ...
32	Poison Plnt. Conc..	☐ ....
33	Poison Plnt. Dist..	☐ ....
	ANIMAL USE	
34	Lvstk. Class.......	☐ ....
35	Grazing Season.....	☐ ....
	Wildlife	
36	Deer Winter Rge....	☐ ....
37	Ant. Winter Rge....	☐ ....
38	Sage Hens..........	☐ ....
	SOIL & MOISTURE	
	Erosion	
39	Agent..............	☐ ....
40	Condition..........	☐ ....
41	Trend..............	☐ ....

RANGE
(CARD 20)
PROGRAM RECORD

COL.

Water

42 Developed.....☐...............

43 Potential.....☐...............

Soil

44 Class........☐...............

45 Depth-Inches..☐...............

RANGE
(CARD 20)
INPUT CODE

COLUMN

1-6 Serial Number - enter direct.

7-8 Card Type - enter / 2 / 0 /

MANAGEMENT

Range

9 Survey Completed - fiscal year completed, by code.

10 Adjudicated - mark "X" if has been completed.

11 Plans Completed - fiscal year completed, by code.

Watershed

12 Plans Completed - mark "X" if completed.

13 Project Started - fiscal year started, by code.

14 Project Completed - fiscal year completed, by code.

Improvements

15 Check Dams - adequate or needed, by code.

16 Pitting - adequate or needed, by code.

17 Contouring - adequate or needed, by code.

CONDITION

18 Range - excellent, good, fair, poor, very poor, by code.

19 Range Trend - improving, static, slightly declining, rapidly declining, by code.

20 Present Carrying Capacity in AUM's - enter number direct.

21 Potential Carrying Capacity in AUM's - enter number direct.

IMPROVEMENTS

22 Brush Control - mark "X" if improvement plans needed.

23 Weed Control - mark "X" if improvement plans needed.

24 Fencing - mark "X" if improvement plans needed.

25 Seeding - mark "X" if improvement plans needed.

26 Erosion Control - mark "X" if improvement plans needed.

27 Pest Control - mark "X" if improvement plans needed.

28 Blight Control - mark "X" if improvement plans needed.

VEGETATION

29-31 Grasses - species, by code.

32 Poisonous Plant Concentration - sparce, common, dense, by code.

33 Poisonous Plant Distribution - generalized or localized, by code.

ANIMAL USE

34 Livestock Class - cattle or sheep, by code.

35 Grazing Season - spring, summer, winter, spring-fall, yearly, by code.

Wildlife

36 Deer Winter Range - concentration of animals as large, medium, small, by code.

37 Antelope Winter Range - concentration of animals as large, medium, small, by code.

38 Sage Hens.- concentration of animals as large, medium, small, by code.

SOIL AND MOISTURE

Erosion

39 Agent - wind, water, both, by code.

40 Condition - negligible, slight, moderate, severe, extreme, by code.

41 Trend - decreasing, static, slightly increasing, rapidly increasing, by code.

Water

42 Developed - mark "X" if has been developed.

43 Potential - mark "X" if has potential, but has not been developed.

Soil

44 Class, by code.

45 Depth, enter inches direct.

###

CARD								MANAGEMENT									CONDITION				IMPROVEMENTS							VEGETATION					ANIMAL USE					SOIL & MOISTURE							RANGE CARD																																		
								Range			Wtrshd.			Improv.																					Wildlife			Erosion			Wtr.		Soil																																					
Serial Number						Type		Sur. Compl.	Adjudicated	Plans Compl.	Plans Compl.	Proj. Started	Proj. Compl.	Check Dams	Pitting	Contouring	Range	Rge. Trend	Pres. Cap. AUM's	Pot. Cap. AUM's	Brush Control	Weed Control	Fencing	Seeding	Erosion Control	Pest Control	Blight Control	Grasses			Pois. Plnt. Cont.	Pois. Plnt. Dist.	Livestock Class.	Grazing Season	Deer Wntr. Rge	Ant. Wntr. Rge	Sage Hens	Agent	Condition	Trend	Developed	Potential	Class	Depth																																				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

D. FORESTRY DETAIL CARDS & PROGRAM RECORDS

(Initial Data Selection)

There are three cards and program records which contain selected data for conducting the forestry program. The related data is organized according to program fields:

Forest Inventory Card - mature timber volumes, immature acreage and volume

Timber Removal and Loss Card - planned thinning, commercial and non-commercial thinning, planned timber sales, mature timber cut, and timber losses

Reforestation and Damage Card - timber damage and reforestation activities

The frequency of data changes on these cards will be regulated by the intensity and development of the forestry resource program information. These detail cards will be given the same serial number as its master card.

Sec. ____________

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FOREST INVENTORY
(CARD 30)
PROGRAM RECORD

COL.	
1-6	Serial Number
7-8	Card Type Code
	MATURE TIMBER VOLUMES
	Last Listing Reg
	Depl. or Accr
9-12	Chargeable
	Last Listing Reg.Def
	Depl. or Accr
13-16	Chargeable
	Last Listing Reg
	Depl. or Accr
17-20	Non-Chargeable
	Last Listing Reg.Def
	Depl. or Accr
21-24	Non-Chargeable
25-26	Acres
	IMMATURE ACREAGE VOLUMES
27-28	120 Yrs.-Acres
29-30	110 Yrs.-Acres
31-32	100 Yrs.-Acres
33-34	90 Yrs.-Acres
35-36	80 Yrs.-Acres

COL.	
37-38	70 Yrs.-Acres
39-40	60 Yrs.-Acres
41-42	50 Yrs.-Acres
43-44	40 Yrs.-Acres
45-46	30 Yrs.-Acres
47-48	20 Yrs.-Acres
49-50	10 Yrs.-Acres
51-52	1-5 Yrs.-Acres
53-56	Total Volume
	ACREAGE
57-58	Non-Stocked
59-60	Conf. For. Acres
61-62	Hardwood
63-64	Non-Commercial
65-66	Non-Forest

FOREST INVENTORY
(CARD 30)
INPUT CODE

COLUMN

1-6 Serial Number - enter direct.

7-8 Card Code Type - enter/ 3/ 0/.

MATURE TIMBER

Write down listing at end of last fiscal year-on dotted line.
Subtract or add depletions or accretions during present fiscal year-on dotted line.

9-12 Enter Product - chargeable regulated volume in MBF.

Write down listing at end of last fiscal year.
Subtract or add depletions or accretions during present fiscal year.

13-16 Enter Product - chargeable regulated-deferred volume in MBF.

Write down listing at end of last fiscal year.
Subtract or add depletions or accretions during present fiscal year.

17-20 Enter Product - non-chargeable regulated volume in MBF.

Write down listing at end of last fiscal year.
Subtract or add depletions or accretions during present fiscal year.

21-24 Enter Product - non-chargeable regulated-deferred volume in MBF.

25-26 Enter Mature Timber Acreage direct.

IMMATURE TIMBER

27-28 to 51-52 - Enter Acreages direct.

53-56 Enter Immature Volume in MBF.

57-58 to 65-67 Enter Acres Direct.

CARD SERIAL NUMBER	CARD TYPE CODE	MATURE TIMBER					IMMATURE TIMBER - ACREAGE BY AGE CLASS														TOTAL ACRES					FOREST INVENTORY CARD
		CHARGEABLE VOLUME		NON-CHARGEABLE VOLUME		ACRES	120	110	100	90	80	70	60	50	40	30	20	10	1-5	Total Immature Timber Volume	NON-STOCKED	CONF. FOR.	HWD. FOR.	NON-COM. FOR.	NON-FOREST LAND	
		REG.	REG.-DEF.	REG.	REG.-DEF.																					
0 0 0 0 0 0	0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0 0 0	0 0	0 0	0 0	0 0	0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0
1 2 3 4 5 6	7 8	9 10 11 12	13 14 15 16	17 18 19 20	21 22 23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 50	51 52	53 54 55 56	57 58	59 60	61 62	63 64	65 66 67 68	69 70 71 72 73 74 75 76 77 78 79 80
1 1 1 1 1 1	1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1 1 1	1 1	1 1	1 1	1 1	1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1
2 2 2 2 2 2	2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2	2 2 2 2	2 2	2 2	2 2	2 2	2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2
3 3 3 3 3 3	3 3	3 3 3 3	3 3 3 3	3 3 3 3	3 3 3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3	3 3 3 3	3 3	3 3	3 3	3 3	3 3 3 3	3 3 3 3 3 3 3 3 3 3 3 3
4 4 4 4 4 4	4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4 4 4	4 4	4 4	4 4	4 4	4 4 4 4	4 4 4 4 4 4 4 4 4 4 4 4
5 5 5 5 5 5	5 5	5 5 5 5	5 5 5 5	5 5 5 5	5 5 5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5 5 5	5 5	5 5	5 5	5 5	5 5 5 5	5 5 5 5 5 5 5 5 5 5 5 5
6 6 6 6 6 6	6 6	6 6 6 6	6 6 6 6	6 6 6 6	6 6 6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6	6 6 6 6	6 6	6 6	6 6	6 6	6 6 6 6	6 6 6 6 6 6 6 6 6 6 6 6
7 7 7 7 7 7	7 7	7 7 7 7	7 7 7 7	7 7 7 7	7 7 7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7	7 7 7 7	7 7	7 7	7 7	7 7	7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7
8 8 8 8 8 8	8 8	8 8 8 8	8 8 8 8	8 8 8 8	8 8 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8 8 8	8 8	8 8	8 8	8 8	8 8 8 8	8 8 8 8 8 8 8 8 8 8 8 8
9 9 9 9 9 9	9 9	9 9 9 9	9 9 9 9	9 9 9 9	9 9 9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9	9 9 9 9	9 9	9 9	9 9	9 9	9 9 9 9	9 9 9 9 9 9 9 9 9 9 9 9
1 2 3 4 5 6	7 8	9 10 11 12	13 14 15 16	17 18 19 20	21 22 23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 50	51 52	53 54 55 56	57 58	59 60	61 62	63 64	65 66 67 68	69 70 71 72 73 74 75 76 77 78 79 80

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TIMBER REMOVAL AND LOSS
(CARD 31)
PROGRAM RECORD

COL.	
1-6	Serial Number.
7-8	Card Type Code......
	PLANNED THINNING
9-10	Non-Commer. Acres...
11-13	Non-Commer. Cost....
14	Year Scheduled......
15-16	Commercial Acres....
17-19	Commercial Vol......
20	Year Scheduled......
	THINNING-COMMERCIAL
	Last Listed Reg.................
	Depl. or Accr......
21-23	Chargeable.........
	Last Listed Reg. Def............
	Depl. or Accr......
24-26	Chargeable.........
	Last Listed Reg.................
	Depl. or Accr......
27-29	Non-Chargeable.....
	Last Listed Reg. Def............
	Depl. or Accr......
30-32	Non-Chargeable.....

COL.	
33-36	Timber Value........
	PLANNED MATURE TIMBER SALES
37	Year Scheduled......
38-39	Acres..............
40-43	Volume.............
	MATURE TIMBER CUT
44-45	Acres..............
46-49	Chargeable Vol......
50-53	Non-Chargeable Vol..
54-57	Total Value Tbr Cut.
	TIMBER LOSSES
	FIRE
58-59	Acres..............
60-63	Vol. Destroyed......
	NATURAL
64-65	Acres..............
66-69	Vol. Destroyed......
	TRESPASS
70-71	Acres..............
72-74	Volume.............
75	Reported Damage....
76	Actions Pending....

TIMBER REMOVAL AND LOSS
(CARD 31)
INPUT CODE

COLUMN

1-6 Serial Number - enter direct.

7-8 Card Code Type - enter/ 3/ 1 /

PLANNED THINNING

9-10 Non-Commercial Acres - enter direct.

11-13 Cost - enter in hundreds of dollars.

14 Year - enter last digit of fiscal year.

15-16 Commercial Acres - enter direct.

17-19 Commercial Volume - enter in MBF.

20 Year - enter last digit of fiscal year.

COMMERCIAL THINNING

Write down listed regulated volume at end of fiscal year-on dotted line.
Subtract or add depletions or accretions during present fiscal year-on dotted line.

21-23 Enter Product - chargeable regulated volume in MBF.

Write down listed regulated-deferred volume at end of fiscal year.
Subtract or add depletions or accretions during present fiscal year.

24-26 Enter Product - chargeable regulated-deferred volume in MBF.

Write down last listed regulated volume at end of fiscal year.
Subtract or add depletions or accretions during present fiscal year.

27-29 Enter Product - non-chargeable regulated volume in MBF.

Write down last listed regulated-deferred volume at end of fiscal year.
Subtract or add depletions or accretions during present fiscal year.

30-32 Enter Product - non-chargeable regulated-deferred volume in MBF.

33-36 Timber Value - enter total value of thinnings in MBF.

PLANNED MATURE TIMBER SALES

37 Year - enter last digit of year that sale is planned to be made.

38-39 Acres - enter direct.

40-43 Volume - enter volume in MBF.

MATURE TIMBER CUT

44-45 Acres

46-49 Enter total chargeable volume cut in MBF.

50-53 Enter total non-chargeable volume cut in MBF.

VALUE OF TIMBER CUT

54-57 Enter total value of mature timber cut in hundreds of dollars.

TIMBER LOSSES - FIRE

58-59 Enter acres destroyed by fire direct.

60-63 Enter volume of timber destroyed by fire in MBF.

TIMBER LOSSES - NATURAL

64-65 Enter acres destroyed by natural causes direct.

66-69 Enter volume of timber destroyed by natural causesin MBF.

TIMBER LOSS - TRESPASS

70-71 Enter acres of timber lost by trespass - direct.

72-74 Enter volume of timber cut in trespass in MBF.

75 Reported Damage - enter code number:

1. Fire
2. Trespass
3. Insect
4. Fungus
5. Erosion
6. Windstorms
7. Animal Damage
8.
9.
0.

76 Actions Pending - enter code number:

1. Timber Trespass
2. Fire Trespass
3. Damage Appraisal

		PLANNED THINNING						THINNING - FISCAL YEAR					MATURE TIMBER							TIMBER REMOVAL AND LOSS CARD								
		Non-Com.			Commercial			Charge. Vol.		Non-Charge. Vol			Planned Sales			Sales - Fiscal Year				Timber Losses (Destroyed)								
																				Fire		Natural		Trespass				
Card Serial Number	Card Code Type	Acres	Cost	Year	Acres	Volume	Year	Regulated	Reg-Def.	Regulated	Reg.-Def.	Total Value Thin. Timber Cut	Year	Acres	Volume	Acres	Volume	Volume	Total Value Mature Timber Cut	Acres	Volume	Acres	Volume	Acres	Volume	Rep. Damage	Act. Pend.	
0 0 0 0 0 0	0 0	0 0	0 0 0	0	0 0	0 0 0	0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0	0	0 0	0 0 0 0	0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0	0 0 0 0	0 0	0 0 0 0	0 0	0 0 0	0	0	0 0 0 0
1 2 3 4 5 6	7 8	9 10	11 12 13	14	15 16	17 18 19	20	21 22 23	24 25 26	27 28 29	30 31 32	33 34 35 36	37	38 39	40 41 42 43	44 45	46 47 48 49	50 51 52 53	54 55 56 57	58 59	60 61 62 63	64 65	66 67 68 69	70 71	72 73 74	75	76	77 78 79 80
1 1 1 1 1 1	1 1	1 1	1 1 1	1	1 1	1 1 1	1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1 1	1	1 1	1 1 1 1	1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1	1 1 1 1	1 1	1 1 1 1	1 1	1 1 1	1	1	1 1 1 1
2 2 2 2 2 2	2 2	2 2	2 2 2	2	2 2	2 2 2	2	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2 2	2	2 2	2 2 2 2	2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2	2 2 2 2	2 2	2 2 2 2	2 2	2 2 2	2	2	2 2 2 2
3 3 3 3 3 3	3 3	3 3	3 3 3	3	3 3	3 3 3	3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3 3	3	3 3	3 3 3 3	3 3	3 3 3 3	3 3 3 3	3 3 3 3	3 3	3 3 3 3	3 3	3 3 3 3	3 3	3 3 3	3	3	3 3 3 3
4 4 4 4 4 4	4 4	4 4	4 4 4	4	4 4	4 4 4	4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4 4	4	4 4	4 4 4 4	4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4	4 4 4 4	4 4	4 4 4 4	4 4	4 4 4	4	4	4 4 4 4
5 5 5 5 5 5	5 5	5 5	5 5 5	5	5 5	5 5 5	5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5 5	5	5 5	5 5 5 5	5 5	5 5 5 5	5 5 5 5	5 5 5 5	5 5	5 5 5 5	5 5	5 5 5 5	5 5	5 5 5	5	5	5 5 5 5
6 6 6 6 6 6	6 6	6 6	6 6 6	6	6 6	6 6 6	6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6 6	6	6 6	6 6 6 6	6 6	6 6 6 6	6 6 6 6	6 6 6 6	6 6	6 6 6 6	6 6	6 6 6 6	6 6	6 6 6	6	6	6 6 6 6
7 7 7 7 7 7	7 7	7 7	7 7 7	7	7 7	7 7 7	7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7 7	7	7 7	7 7 7 7	7 7	7 7 7 7	7 7 7 7	7 7 7 7	7 7	7 7 7 7	7 7	7 7 7 7	7 7	7 7 7	7	7	7 7 7 7
8 8 8 8 8 8	8 8	8 8	8 8 8	8	8 8	8 8 8	8	8 8 8	8 8 8	8 8 8	8 8 8	8 8 8 8	8	8 8	8 8 8 8	8 8	8 8 8 8	8 8 8 8	8 8 8 8	8 8	8 8 8 8	8 8	8 8 8 8	8 8	8 8 8	8	8	8 8 8 8
9 9 9 9 9 9	9 9	9 9	9 9 9	9	9 9	9 9 9	9	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9 9	9	9 9	9 9 9 9	9 9	9 9 9 9	9 9 9 9	9 9 9 9	9 9	9 9 9 9	9 9	9 9 9 9	9 9	9 9 9	9	9	9 9 9 9
1 2 3 4 5 6	7 8	9 10	11 12 13	14	15 16	17 18 19	20	21 22 23	24 25 26	27 28 29	30 31 32	33 34 35 36	37	38 39	40 41 42 43	44 45	46 47 48 49	50 51 52 53	54 55 56 57	58 59	60 61 62 63	64 65	66 67 68 69	70 71	72 73 74	75	76	77 78 79 80

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REFORESTATION AND DAMAGE
(CARD 32)
PROGRAM RECORD

COL.

1-6 Serial No

7-8 Card Type Code.

TIMBER DAMAGE

Mature Timber Killed

9-10 Acres.......

11-14 Volume......

Immature Timber Killed

15-16 Acres.......

17-19 Volume......

Pre-Merch. Trees Killed

20-21 Damaged Acres..

22-23 % Stkg. Remain.

REFORESTATION

Stocking Survey

24-25 Date-Yr. Code..

Adequate Stocking

26-27 Acres.........

28-29 % Point Occ....

Inadequate Stocking

30-31 Acres.........

32-33 % Point Occ....

COL.

TREATMENT

34 Type Work....

35 Date-Yr. Code

36-37 Acres Seeded.

38 Type Work....

39 Date-Yr. Code

40-41 Acres Planted

42 Other Treat..

43-44 Acres........

45-47 Cost-Total...

FIRST YEAR SURVEY

48 Year Code....

49 Month Code...

Adequate Stock

50-51 Acres........

52-53 % Point Occ..

Inadequate Stock

54-55 Acres........

56-57 % Point Occ..

COL.

THIRD YEAR SURVEY

58 Year Code......

59 Month Code.....

Adequate Stock

60-61 Acres.........

62-63 % Point Occ....

Inadequate Stock

64-65 Acres.........

66-67 % Point Occ....

REFORESTATION AND DAMAGE
(CARD 32)
INPUT CODE

COLUMN	
1-6	Serial Number - enter direct.
7-8	Card Type - enter /3 /2 /
	TIMBER DAMAGE
	Mature Timber Killed
9-10	Acres - enter direct.
11-14	Enter volume killed in MBF.
	Immature Timber Killed
15-16	Acres - enter direct.
17-19	Enter volume killed in MBF.
	Pre-Merchantable Trees Killed
20-21	Damaged Acres - enter direct.
22-23	% Stocking Remaining - enter direct.
	REFORESTATION
	Stocking Survey
24-25	Date - Code year by last digit of fiscal year. Code month by digits and A & B for last two months of fiscal year.
	Adequate Stocking
26-27	Acres - enter direct.
28-29	% of Point occupied - enter % direct.
	Inadequate Stocking
30-31	Acres - enter direct.
32-33	% of Point Occupied - enter % direct.

COLUMN	
	TREATMENT
34	Type of Work - Code 1-F.A., 2-Contract.
35	Date - enter last digit of fiscal year.
36-37	Acres Seeded, enter direct.
38	Type of Work - Code 1-F.A., 2-Contract.
39	Date - enter last digit of fiscal year.
40-41	Acres Planted - enter direct.
42	Other Treatment - 1. Brush Control, 2. Scarification.
43-44	Acres - enter direct.
45-47	Enter total costs direct in hundreds of dollars.
	FIRST YEAR SURVEY
48	Year - enter last digit of fiscal year.
49	Month - enter month code by digits and A & B for last two months of fiscal year.
	Adequate Stocking
50-51	Acres - enter direct.
52-53	% of Point Occupied - enter % direct.
	Inadequate Stocking
54-55	Acres - enter direct.
56-57	% of Point Occupied - enter % direct.
	THIRD YEAR SURVEY
58	Year - enter last digit of fiscal year.
59	Month - enter month code by digits and A & B for last two months of fiscal year.

COLUMN	
	Adequate Stocking
60-61	Acres - enter direct.
62-63	% of Points Occupied - enter % direct.
	Inadequate Stocking
64-65	Acres - enter direct.
66-67	% of Points Occupied - enter % direct.

Card Serial Number	Card Type Code	TIMBER DAMAGE (KILLED)						REFORESTATION																								REFORESTATION AND DAMAGE CARD
		Mature		Immature		Pre-Mer.		Stocking Survey					Treatment									First Year Survey					Third Year Survey					
									Adequate		Inadequate		Seed			Plant			Other		Cost		Adequate		Inadequate			Adequate		Inadequate		
		Acres	Volume	Acres	Volume	Acres	% Stock Rem.	Date	Acres	% Point Occ.	Acres	% Point Occ.	Type	Date	Acres	Type	Date	Acres	Type	Acres		Date	Acres	% Point Occ	Acres	% Point Occ	Date	Acres	% Point Occ.	Acres	% Point Occ.	
0 0 0 0 0 0	0 0	0 0	0 0 0 0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0	0 0	0	0	0 0	0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0
1 2 3 4 5 6	7 8	9 10	11 12 13 14	15 16	17 18 19	20 21	22 23	24 25	26 27	28 29	30 31	32 33	34	35	36 37	38	39	40 41	42	43 44	45 46 47	48 49	50 51	52 53	54 55	56 57	58 59	60 61	62 63	64 65	66 67	68 69 70 71 72 73 74 75 76 77 78 79 80
1 1 1 1 1 1	1 1	1 1	1 1 1 1	1 1	1 1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1	1	1 1	1	1	1 1	1	1 1	1 1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1 1 1 1 1 1 1 1 1 1 1 1
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V. THE INSTALLATION AND OPERATING COSTS OF THIS COORDINATING SYSTEM FOR RESOURCE MANAGEMENT

It is anticipated that the primary costs of installing the system at this time would be confined to those costs connected with the planning record improvements, contained in this report.

A. The cost factors of installation of the data processing system on a state-wide basis are:

1. Conversion of accumulated data from management atlases to program records forms. The conversion of the master unit classification detail data at this time would be possible with relatively little expense since the system has not been developed to the state where mass information has been recorded. However, the forest management atlases have been developed for a number of years; and it is estimated that one person in each forest master unit would be required for a 4-month period to organize and transpose data to the program record forms. Since the data in atlases is accumulating each day, conversion costs are lowest at the earliest date at which the conversion could be made.

2. Initial collection of master card data. The data on the master card is actually required for accomplishing the individual program plans under the master unit classification system. The master card data is not presently accumulated or recorded in form suitable for tabulation or computation. The data would be recorded on program record forms from basic land records. About one year's time would be required to accumulate the master card data on a routine operating basis.

3. The accumulation of the individual activity program detail data. The data for the activity program detail cards would be accomplished on a gradual basis tied to the development of various programs and master unit analysis. Approximately 1,300,000 acres could be completed each year; therefore, about 10 years would be required to collect all initial data for all programs and lands within the state.

4. The final selection of data required for district planning needs would be coordinated by the management data specialist with district and state office personnel. About 4 months' time would be required to coordinate the final selection of data for installation of the system.

5. Preparation of the input code instruction for use by field personnel. These instructions could be completed in about 2 weeks' time after the final selection of data has been made.

6. Recruitment of a management data specialist to coordinate installation of the system and to maintain the system operating capabilities. In the event that an untrained person were hired to fill this position, it would be necessary to send that individual to participate in a programming course, which is generally of 4 weeks' duration.

7. Recruitment of key punch operators. An experienced key punch operator would be required, or an untrained person could be recruited and given formal training for a cost of about $250.00 for a training period of 2 weeks. An additional person would be required to be recruited for assisting the key punch operator and serving typing needs of the management data specialist.

8. Key punch and verifier equipment, plus space for the management data section. The use of the data processing unit for printing management planning records and computing and tabulating is obligated on an hourly basis.

In all, an estimated 6 months period of time will be required from the date of appointment of the management data specialist to the complete initial installation of the data processing system.

B. The cost factors of installation of the maps and overlay planning record on a state-wide basis are:

1. The preparation and publication of instructions for uniform installation and maintenance.

2. Most of the basic map details are available in the western Oregon counties. A transfer of detail to this system could be accomplished in routine operations. The primary costs will be the purchase of film for the overlays.

3. The basic map details are now being accumulated in eastern Oregon districts. The primary costs will be for aerial photographs, where necessary, and for the purchase of film for the overlays.

C. The cost factors of installation of the Historical Activity Record are:

The major costs will be in printing of the form. The installation can be accomplished in the course of routine business.

D. The estimated expense of initiating a pilot project covering a master unit, which has been selected as the Malheur Master Unit. This unit comprises approximately 2,000,000 acres located in 150 townships in Malheur County, Oregon.

1. Data Processing Costs

a. Machine Cards Purchase:

Masters	50,000	
Detail		
Forest	1,000	
General	50,000	
Range	50,000	
	151,000	$160.00

b. Plates for Printing Machine Cards:

6 @ $50.00 each $300.00

c. Contract Key Punch at Bonneville Power Administration:

151,000 cards @ $55.00/1,000 $8,305.00

d. Printing of Program Record Forms: $1,000.00

e. Data Processing Unit Printed Management Planning Record with Tabulations (Per complete printing and tabulation): $187.50

2. Mapping Costs

a. Maps and Overlays:

Overlays - 310 @ $4.65 each $1,450.00

Maps (Base) - 150. Cost dependent on available photo coverage. The data necessary to prepare these is already being accumulated for the Vale Project.

b. Map Racks:

3 @ $250.00 each $750.00

3. Historical Activity Record

Printing costs: 3,100 @ $.01 $31.00

4. Supervision of installation of a pilot project. A minimum personnel cost would be realized by utilizing the personnel of the present study group as consultants. The supervision will include final selection of data for the forms to be used.

TOTAL APPROXIMATE COSTS OF INSTALLING THE PILOT PROJECT $12,200.00
(This does not include personnel and travel expense)

E. Personnel and equipment requirements for total state-wide installation of the system.

1.	Card key punch (printing type)	rental	$60.00/month
2.	Card verifier	rental	$50.00/month
3.	Office space 300 sq. ft.		
4.	Machine cards:		
	Blank cards - 1,500,000 @ $1.05/1,000		$1,575.00
	Plates for printing - 6 @ $50.00 each		$300.00
5.	Office equipment:		
	3 desks and 3 chairs		$340.00
	1 electric typewriter		$450.00
6.	Map racks for districts - 20 @ $250.00 each		$5,000.00
7.	Maps and overlays:		
	Mapping currently being done.		
	Material for overlays - 2,000 overlays @ $1.65 ea.		$3,300.00
	Labor for overlays - 2,000 overlays @ $3.00 each		$6,000.00
8.	Conversion of data from atlas to cards:		
	44 man months @ GS-3 rate		$12,750.00
9.	Personnel (all base salaries):		
	1 Management Data Specialist, GS-12		$9,475/Annum
	1 Key Punch Operator, GS-3		$3,820/Annum
	1 Clerk-Stenographer/Key Punch Operator, GS-4		$4,110/Annum
10.	Convert from cards to tape (to be considered at a later date):		
	Machine time, on the basis of 1,250,000 cards - 35 hours @ $37.50/hour		$1,300.00
	Tape reels - 40 @ $35.00 each		$1,400.00

VI. THE ORIGIN OF THIS REPORT.

On January 16, 1963, the members of the Oregon State Office Training Committee, staffed by Irving Anderson, Howard DeLano, Carroll DuBuar, Rod Fety, and Merle Winn, selected a project for accomplishment by field management trainees, Roger Burwell, Roger Dierking, and Horace McBroom, titled, "Land Management Control System for Eastern Oregon Operations." The committee, on January 18, 1963, held a conference with the trainees to explain and discuss the nature of the assignment. The project contemplates the trainees' devising a system to assist district offices in planning and coordinating program activities. The complexities and scope of district office programs were also discussed. The desirability of considering only those systems generally adaptable to all Bureau district operations was emphasized. A lack of district office uniformity in records information and progress in developing program plans was mentioned.

The assignment of this project gives recognition to problems existing in planning and carrying out present district office programs and meeting future land management needs.

The first question presented by this project is for the trainees to determine in what way, if any, the existing management system for eastern Oregon district offices should be improved, replaced or supplemented. This determination involves identifying and considering the needs and requirements for management of eastern Oregon programs, and then to determine whether the existing management methods are adequate to carry out the program.

The needs and requirements mentioned in the first part of this report were evaluated and deficiencies were found in the existing management planning records. The record deficiencies do not permit the development of the master unit plan on an expanding basis to meet the needs for the dynamic and comprehensive district operations contemplated by the Bureau.

The existing records are accomplished by human and nonmechanical procedures and apparently fail for this reason. This evaluation was unable to find ways to correct the inherent weaknesses in the present planning records. It was therefore necessary to consider and examine whether the installation of a method to collect and evaluate data by the use of the machine data processing unit would meet the district program requirements.

The nature of the installation and operation of data processing systems used by other organizations in this area was studied with personnel at the data processing section of Bonneville Power Administration. It was found that there are several agencies using data processing methods, i. e., the Bureau of Indian Affairs uses a data processing record system for land title records; the Bureau of Land Management uses data processing records for timber plot studies and range surveys; and almost all agencies have equipment, payroll, and supply inventory computed or tabulated by data processing methods. The Bureau of Public Roads engineers the design and construction of roads by a data processing system. Their processing unit is located at Vancouver, Washington, and serves several public agencies in this area. No agency was found to be using the data processing system in the manner which is contemplated for district data program purposes. Since there appeared to be no other comparable system in operation, it was necessary to first evaluate the potential of data processing methods, then determine the extent of district program record requirements, and finally, to determine whether the machine data system could be installed from a practical and economic basis.

This study showed that a data processing system would fully meet the present detailed data needs for planning district operations and would be subject to virtually unlimited expansion, if programmed on an economically sound basis. Since a data processing system would satisfy the requirements of district operations, an improved record system was designed to operate with the data processing method as a focal point of accumulating, computing and presenting a management planning record for use by field managers. The system includes the management planning record, programming and data control features, a historical activity record, data computations and tabulations and map and overlay planning records.

A data processing system has innumerable possibilities for land management planning purposes. This study concerned itself only with the immediate benefits to district operations and the meeting of existing program requirements. This system undoubtedly would very well serve the needs of the State Director, his staff, and the office of the Director.

There are strong indications that the continuation of the existing data collection records would result in actual financial losses from a data utilization standpoint in an area where the Bureau anticipates financial gain through utilizing mass data for the implementation of a well-planned comprehensive management program.

This system is adaptable for installation in other states where large areas of lands are to be retained in Federal ownership for intensive management purposes.

A pilot project is suggested, to be installed prior to any contemplated installation of the system on a state-wide basis.

VII. GENERAL INFORMATION ON DATA PROCESSING

lowest-cost magnetic tape system

–using new **IBM** 7330 tape units!

IBM 1401 Data Processing System

with new, low-cost magnetic tape units!

Now you can have the speed and flexibility of magnetic tape input and output in an IBM 1401 system at an even lower cost than in the past. New IBM 7330 Magnetic Tape Units make this possible.

Reading high-density magnetic tape at 20,000 characters per second, these new units permit entry of data into the 1401 more than 18 times faster than is possible from punched cards. And output data can be recorded 60 times faster than it can be punched into cards.

Tape also has many other advantages. For example, greater speed is obtained through tape sorting and merging and in the summarizing of data. Less space is required for storing records. Record length is significantly increased. Files of varying record length may be merged for simultaneous processing.

Fast internal processing speeds permit the 1401 to add two 8-position fields in 0.299 milliseconds; compare two 6-position fields in 0.23 milliseconds; and multiply a 6-position field by a 4-position field in an average of 1.955 milliseconds (using the direct multiply-divide option).

With the IBM 1401—the world's most widely accepted electronic data processing system—you buy only the amount of fast magnetic core storage you actually need: 1400, 2000, 4000, 8000, 12,000 or 16,000 positions. And, since the 1401 accepts both data and instructions of variable word-length, you will need far fewer positions to store a given amount of data than are required by systems having fixed-word-length limitations.

A unique feature of the 1401 is its powerful print editing ability. Under control of the stored program, a single step, requiring much less than a thousandth of a second, edits a data field for printing. This provides for swift insertion of necessary punctuation prior to transmission to the printer. Documents and reports are printed at up to 600 lines per minute, with 132 alphameric characters per line.

Up to six 7330 units can be attached to one 1401 system. These units provide dual-density operation, under switch control, and are therefore compatible with IBM 727 and 729 tape units and with the IBM 7701 Magnetic Tape Transmission Terminal, which transmits or receives taped data over long-distance telephone wires.

A high degree of accuracy is provided by automatic horizontal and vertical parity checking and by the 7330's two-gap head which permits reading and checking of data immediately after it is written on tape.

IBM 1401 Data Processing System

Input

Magnetic Tape

- Choice of tape unit speeds and cost.
  IBM 7330 reads
  high-density tape at 20,000 ch/sec.
  low-density tape at 7200 ch/sec.
  IBM 729 II reads
  high-density tape at 41,667 ch/sec.
  low-density tape at 15,000 ch/sec.
  IBM 729 IV reads
  high-density tape at 62,500 ch/sec.
  low-density tape at 22,500 ch/sec.
- Up to 6 of any one type unit can be attached.
- Horizontal and vertical parity checking assures accurate reading.
- Accidental erasure of taped data is protected against.
- Inter-system communication with other IBM tape systems is provided through interchangeability of tapes.

Punched Cards

- Up to 800 cards can be read per minute.
- Read station has 3000-card-capacity File Feed.
- Multiple 1000-card-capacity, non-stop-unloading, radial stackers permit segregation of cards under program control. (Up to 3 are available to separate input cards.)
- Card reading is checked for accuracy.

Processing

- Choice of 1400, 2000, 4000, 8000, 12,000 or 16,000 positions of fast alphameric storage.
- Stored program.
- Solid-state, high-speed arithmetical and logical circuits.
- Extra processing power can be added through optional features.
- Advanced logic; simple programming in fewer steps.
- Accepts data and instructions of variable length, permitting optimum use of storage.
- Number and size of totals is limited only by number of available storage positions.
- All data flow is parity checked.
- Powerful print editing ability.
- Fast internal processing speeds—
  Add two 8-position fields: 0.299 ms.
  Compare two 6-position fields: 0.23 ms.
  Multiply a 6-position field by a 4-position field: 15 ms. on a standard model, 1.955 ms. average using Direct Multiply-Divide option.
- Indexing and other optional advanced programming features are available.

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Output

Magnetic Tape

- Tape units can write low- or high-density tapes at the following rates:
  IBM 7330—7200-20,000 ch/sec.
  IBM 729 II—15,000-41,667 ch/sec.
  IBM 729 IV—22,500-62,500 ch/sec.
- Two-gap head of tape units permits immediate parity check of data as it is written on tape.

Printed Reports

- Chain printer prints up to 600 lines per minute.
- Ultra-high-speed skipping:
  8 lines or less—33 inches per second;
  9 lines or more—75 inches per second.
- 132 alphameric printing positions per line.
- 48 characters per print position.
- Printing and carriage under stored program control.
- Printer operation is electronically checked.

Punched Cards

- Summary punches up to 250 cards per minute.
- Punching is checked for accuracy.
- 1000-card capacity, non-stop-unloading radial stackers permit continuous operation. (Up to 3 are available to separate output cards.)
- An optional feature permits the punch feed to serve also as an input station, allowing punching of results into input cards.

IBM® International Business Machines Corporation, Data Processing Division, 112 East Post Road, White Plains, New York

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